New approaches to multi-pillar pension systems: What in the world is going on?

Louise FOX
World Bank

&

Edward PALMER
Uppsala University & National Social Insurance Board
Sweden
NEW APPROACHES TO MULTI-PILLAR PENSION SYSTEMS:
WHAT IN THE WORLD IS GOING ON?

Louise Fox
Edward Palmer

June 2000
Abstract

The last five years have been a period of blossoming innovation in pension reform. Macroeconomic forces have been driving changes, as the largely unfunded debt of pay-as-you-go systems are challenging countries with very diverse historical backgrounds to find solutions to the financing the aging population of coming decades. Demographic changes and behavioral responses are also key factors, however, as countries are trying to shift some of the financial risk of the aging population away from future generations to the generation affected, in order to improve incentives to workers and employers. The traditional one pillar, defined benefit schemes are being retooled to meet these challenges.

Two major trends in pension reform are emerging. First, countries are modifying PAYGO systems to strengthen the links between contributions and benefits, increase full-benefit pension ages and phase out seniority arrangements and special privileges. The NDC is the newest tool to achieve this goal, and it has been introduced in both Western Europe and transition economies. Second, privately managed financial account systems are growing. Third, countries with large pension debts are finding it difficult to finance a transition to more funding. These countries are not aspiring for full funding, but instead are retaining PAYGO systems indefinitely. This has the advantage over recognition bonds of not locking in current entitlements. Emerging issues in the reforms include: how to hold down the administrative costs of privately managed financial account systems, how ex ante to assign risks and what low-income countries should do.
Table of Contents

Introduction .........................................................................................................................1

Part I: Review of The Major Reforms .........................................................................5
OECD Countries ............................................................................................................5
Transition Countries of Europe and Central Asia ......................................................9
Latin America ...............................................................................................................13
Asia ...............................................................................................................................16
Africa and The Middle East ........................................................................................19

Part II: Emerging Models .............................................................................................21
Building a Better First Pillar ......................................................................................21
Putting The Pillars Together .......................................................................................23

Part III: Open Issues ....................................................................................................29
Who Bears The Risk? ..................................................................................................29
Expanding Coverage: what to do about low-income countries and low-income
groups in middle income countries? ...........................................................................31

Conclusions ....................................................................................................................33

Table 1: National Pension System Architecture, 1994 and 1999 ....................................35

Table 2: Share of the Population over 60 .................................................................36

References ....................................................................................................................37
Introduction

In 1994, The World Bank published *Averting the Old Age Crisis: Policies to Protect the Old and Promote Growth*, with the intention of surveying the “state of the field” at the time the book was being written. Michael Bruno’s opening words summarized the diagnosis of the book: “Systems providing financial security for the old are under increasing strain throughout the world.” (World Bank 1994). These words are still relevant today, especially in the developing world. Several factors have contributed to this. While dependency ratios continue to increase, reform has not been easy to implement, so the fiscal costs of the systems in the developing world have for the most part continued to increase as well. In some countries, economic shocks worsened the fiscal picture, through lowered growth and increased public debt. Finally, the trend in economic policy goals toward lower inflation, tighter fiscal policy, and increased monetary system interdependence has placed implicit pension debts in sharper focus.

Much has happened in the area of pension reform in the short time since the publication of *Averting the Old Age Crisis*. This paper reviews the more comprehensive reforms, with a focus on those that generated an improvement in the 1994 choice set. Our review is stylistic rather than exhaustive.¹ Our aim is to highlight new approaches or new answers to the above questions, in search of emerging models. Our focus is on experiences that may be transferable to the developing and transition economies, as these are the clients of the World Bank.

More often than not these days, pension reform discussions refer to “multi-pillar” systems. What exactly constitutes a pillar? Authors define this term in different ways, trying to capture the key dimensions in the design of national pension systems. Most authors have considered the following elements important in describing systems:

- *coverage*: is it universal?
- *participation*: is it mandatory or voluntary?
- *contributions*: where is the system on the spectrum moving from a general revenue-financed (perhaps means-tested) benefit, to some form of earnings-based formula -- *defined benefit* (db) scheme, ending with a pure individual lifetime account scheme, that is *defined contribution* (dc)?
- *benefits*: to what extent do benefits (annuities) reflect the life expectancy of the retiree at retirement?
- *funding*: to what extent do assets cover future liabilities?
- *management/ownership/governance*: is it public, private or some mix?

Categorizing systems on the basis of these criteria is no easy matter. For example, consider funding. Few PAYGO systems operate without any cash reserves at all, and a few have very substantial funds. Few “funded” systems have the assets to meet all liabilities regardless of economic conditions or demographic changes. Likewise, an employer, a branch (as in the case of automobile manufacturing) or a whole sector

---

¹ See Demirguc-Kunt and Schwarz (1999) for a more exhaustive discussion of pension reforms around the world.
(employees of the state, all affiliated unions in a confederation of unions) may require all employees to participate in a pension plan. From the point of view of society, participation is voluntary, but in it is mandatory for anyone who wants to be an employee.

In this paper, we want to focus on the dimensions of funding and risk in public, mandatory systems, since these have been two major areas in which practice has evolved since 1994. For our purposes, we propose the following definitions of the pillars.

- **Pillar 1**: Large, mandatory public or quasi-public systems with inter- and intra-generational redistribution, which can be fully funded (Denmark, the Netherlands) partially funded (for example Morocco, the U.S., India) or unfunded (for example Germany and Brazil), where the benefits are determined by a DB or an NDC formula.

- **Pillar 2**: Fully funded, defined contribution systems where benefits depend on the assets in the individual’s account at retirement. These may be:
  
  (a) provident fund systems, which are centralized, government-managed and usually provide lump sum benefits, but may offer an annuity purchase; or

  (b) individual financial account systems, where the participant’s money is invested in privately managed market funds. Benefits may be lump sum, used to purchase an annuity, or taken out in phases.

These two pillars may be supplemented by a minimum guarantee. A guarantee, regardless of how it is formulated, is financed with a tax, and, by definition, breaks the direct link between contributions and benefits. Some (Poland) have called tax-financed guarantee the “zero pillar”. Countries also provide a last resort safety net in the form of social assistance for the very needy. Pillars 1 and 2 may also be supplemented by systems of government regulated, voluntary or semi-voluntary, privately managed pension systems. These systems are often referred to as Pillar 3 (World Bank, 1994). We use this definition of Pillar 3 except in the case where employers are mandated by law to provide a benefit scheme that in principle covers all (or practically all) employees in the country. We classify these cases as Pillar 1 if they are defined benefit schemes, (Denmark, France), and Pillar 2 if they are defined contribution (for example Australia) although this classification is not universally accepted. Our reason for doing so is to highlight: (a) the universal mandatory character, and (b) in the case of DB systems, the extent to which the implicit liability is actually public. In this paper, we focus on contributory, publicly mandated, pension programs, largely ignoring the zero and third pillars.

---

2 This refers to the mandatory occupational pensions; the social pensions are non-contributory, unfunded.
3 In some countries, these privately managed, decentralized individual account systems are also called provident funds (as for example in Hong Kong).
4 Classifying Australia as Pillar 2 is nevertheless problematic, since some employers offer DB, however the mandate is for DC, and the trend is in this direction.
5 All OECD countries, and many other countries have some form of minimum income support legislation for the elderly. Although financed on PAYGO principles (often out of general revenues), these are more often than not non-contributory pensions social assistance programs (for example the U.S., Thailand and
Countries may offer contributors only Pillar 1, only Pillar 2, or a blend. The blend offered may be a mandatory combination of the two pillars (as for example in Poland) or a choice between the two pillars (for example Colombia). We call countries “blend countries” if this offer is made universally. Other countries offer pillar 2 pensions to the private sector and a system of DB pensions to the public sector (for example Indonesia). We do not consider these countries “blend”, as they do not offer a combined system to all contributors. In effect, with this design, the so-called Pillar 1 system is instead an unfunded occupational (Pillar 3) system.

In early 1994, (when Averting was substantially completed), most of the world had Pillar 1 systems. (Table 1) Pillar 1 dominance was enhanced as many African countries added or expanded Pillar 1 systems during the 1980s (Barbone and Sanchez 1999). Government-run provident funds constituted the other main model then. Of those countries that had second pillar systems in 1994, all but Chile were of this type.

In 1994, Chile was not widely received as the best model for the future. The Chilean reform had been criticized from all sides of the political economy spectrum (Bonillo and Gillan 1994; Diamond and Valdés-Prieto 1994). Bonillo and Gillian raised the issue of system coverage, and argued that Pillar 2 systems do not provide enough incentives to cover low-income workers. Only the public system would take on this task. Diamond and Valdés-Prieto reviewed the experience of Chile and noted the following issues with respect to its application in other countries:

- In countries with a large pension debt, either a politically difficult massive savings effort is required to pay off the debt or the PAYGO system continues but in a less flexible and less inefficient form.
- The decentralized model Chile followed has high overhead, which can eat up returns.
- Individual purchases of annuities may not work out given the problems of moral hazard in these markets, but lump sum payments do not provide much insurance.

Proponents of individual financial account systems began to search for alternatives to the Chilean approach that reduce the negatives of this system, while proponents of the PAYGO system sought to improve on the 1994 mode. Both approaches succeeded. The years following the publication of Averting have been ones of blossoming innovation in reform of mandatory pension provision, with an upsurge of ideas for creating financially sustainable mandatory public systems. Within Pillar 1, the trend is towards tightening the links between contributions and benefits. The most fundamental and innovative change has been the implementation of NDC schemes to date in six countries: Italy, the Kyrgyz Republic, Latvia, Mongolia, Poland and Sweden. Within Pillar 2, innovation has addressed the costs of running individual financial account systems.

Our paper is organized as follows. Part I reviews the main issues faced and the reforms adopted in five parts of the world - OECD countries, transition economies of Europe and Central Asia, Latin America, Asian countries, and the middle and low-income countries (Latvia), and are not covered in this paper. Where the pensions are non-contributory but universal or nearly universal (for example Denmark, Hong Kong, or New Zealand) they are covered and considered first pillar systems.
of Africa and the Middle East. In our survey, we find that many more countries have followed Chile in converting acquired PAYGO DB rights into something else. However, the most popular major pension reform turns out to be a blend of pillars. (Table 1) To date, only five countries have passed legislation to completely phase out the PAYGO system—Chile, three others in Latin America, and Kazakhstan in Central Asia.

Part II analyzes the issues that have permeated the discussion in the 1990s, identifying areas where consensus seems to be emerging and where issues remain unresolved. Here, we find that the PAYGO system is still alive and well, but Pillar 1 reforms have primarily focused on getting PAYGO systems to look to the contributor more like DC financial account systems but with little or no funding at all. This has in essence reduced the differences between the two pillars. We then consider why blends have emerged so strongly as the most popular innovation. We conclude that one of the key driving forces has been the need to finance a high implicit debt in the countries which have reformed. At the same time, the individual financial accounts have gained popularity in Pillar 2 reforms, in part, because innovations have been made to lower overhead costs of individual accounts.

A number of issues are still open in pension system design, however, two of which we tackle in our closing section. The first is the issue of managing the risks of public pension systems, where we find outstanding controversy remains over allocating the cost between individuals and generations of increasing life expectancy and the moral hazard risk of early exit. The second issue is whether we yet have a model for low-income countries. Here it is not clear whether the benefits of any system, be it pillar 1, 2 or a blend, outweigh the costs. Lessons for those countries yet to reform are synthesized in the concluding sections.
Part I: Review of The Major Reforms

OECD Countries

*The background.* By the late 1980s, it was already evident that OECD countries faced demographic and labor market participation trends that were moving in troublesome directions for pension systems (OECD 1988). The picture is even bleaker a decade later, as survival rates continue to be revised upwards, older workers are still exiting the work force early, and birth rates remain low. The OECD population will age dramatically in the coming three decades. People over 60 are projected to increase from 20 to 27% of the population by 2020 and to 30% by 2030. (See Table 2.) These expected trends are the result of increased longevity, combined with low birth rates.

The DB-systems of the OECD were mostly designed on premises consistent with the industrial economy of the first half-century, when life expectancy was lower and jobs were physically more demanding. In the post war period, generous benefit rules were added to provide adequate benefits to people unfortunate enough to have lived through two world wars and a deep depression. The benefits were justified by optimistic system dependency projections using the high fertility rates of the 50s and 60s. However, since this time demographics and social conditions have changed. Not only has life expectancy increased, but fertility has declined. As a result system dependency ratios have deteriorated from the roughly 3.5 workers per pensioner in the 1950s to roughly 2.5 by the 1990s, and are expected to reach 2.0 in the not so distant future.

The demographics are not the only explanation of why there are increasingly fewer workers per pensioner. Another reason is that people are leaving the labor force early. Although the retirement age for a full defined-benefit pension in many countries in the OECD is 65, in all countries the *de facto* average age of exit from the labor force is lower. For some OECD countries it was as low as 56-57 for women and 59 for men by the mid-1990s, and the average age of exit for men has dropped about 3-5 years over the 20-year period 1976-1995. (Palmer 1999b)

Early exit is not justifiable solely on health grounds. On the contrary, the subjectively evaluated health of persons under 70 has improved, and jobs are becoming less physically demanding. For example, in the US the percentage of workers in physically demanding jobs has declined from around 20% in the 1950s to 7.5% in the mid 1990s (Steuerle, Spiro and Johnson 1999). The same authors report that only about 20% of Americans 55-59 say their health is fair or poor and only 30% of those between 65 and 69 say their health is only fair or poor -- the vast majority of persons over 60 are in good health. In other words, as the economic and social developments have favored working longer, men have been working less. Over the same period, women raised their age of exit by 3-8 years -- depending on the country. Nevertheless, in most countries, the labor force participation of women is still below that of men, and the average age of exit for men and women together is still falling. (Palmer 1999b).

With the demographics moving as they are, labor will be in shortage, and this ought to influence employer behavior, including adapting work environments more to the needs of
older workers. For persons in good health, the timing of exit from the labor force depends on individual preferences between work and leisure, given their economic resources. The economic resources of older workers depend in part on the overall tax-benefit system. Consequently it is reasonable to believe that overall tax-benefit systems influence the behavior of older workers. A recent set of studies of 11 countries, edited by Gruber and Wise (1998), provides strong evidence that public benefit and tax systems in fact do influence the behavior of older workers. In this study the after-tax gain (or loss) in lifetime wealth of working an additional year from age 55 was examined using the same calculation model for all countries. The results reveal a clear picture: In countries where the net gain to the individual from staying longer is smaller, there are fewer persons age 55 and older in the work force. This study highlights how a combination of the overall tax-benefit structure and occupational schemes reinforce individual decisions about work and leisure, in favor of the latter.

In sum, people are healthier and living longer, but at the same time the design of tax-benefit systems, together with employer behavior, have reinforced individual preferences to exit the labor force at an early age. Early exit creates a moral-hazard risk for the insurance collective as a whole. The individual actors (employees, employers) behave individually in accordance with the country’s system of rules and their own preferences, but the result of this aggregate behavior is to push up the country’s implicit debt, and future taxes for themselves or their children.

The implicit public sector pension debt has been rising. Recently, Disney (1999) has concluded after examining OECD data that most OECD countries have not accumulated sufficient funds in their PAYGO systems to cover the extra costs associated with the large post-war baby-boomers, let alone the costs that increasing longevity will bring. Countries need to reduce liabilities by tightening up rules, or increase funding (taxes and contributions) now to meet unchanged obligations.

What are countries doing? Three countries have increased funding in their systems by introducing individual account systems. The UK had already moved in the direction of increasing advance funding in the 1980s by offering people the option to “contract out” of the state earnings related pension scheme (SERPS) and join private schemes. Reforms in the 1990s strengthened this move. Australia mandated employer coverage, building on existing employer-financed schemes. Sweden, in a series of steps leading to individual choice of fund managers in the year 2000, introduced individual financial accounts on top of its new PAYGO notional account system. Sweden already had a large reserve fund in the public PAYGO system in 1994. (Palmer 2000) Following the reform, the Swedish quasi-mandatory (central labor-management negotiated) schemes have also largely converted to DC financial account schemes.

---
6 Since 1992, employers in Australia have been required to arrange a pension account and contribute a minimum percentage (rising from 3% in 1992 to 9% in 2002) into it for employees. People can supplement on a voluntary basis. About 35% of the self-employed and 95% of full time employees are covered. Coverage of all employed was about 80% in 1995. There is also a general-revenue-financed income support program for the elderly.
These countries form a group of countries with a large element of funding in mandated or quasi-mandated systems, together with Switzerland, which has mandated, funded, employer-based schemes, and Denmark and the Netherlands, with large fully funded quasi-mandated schemes – “quasi” because they are based on central agreements between management and labor.

Most other countries have focused on reducing liabilities, often in the face of strong vested interests that inhibited systemic reform. The most common liability-reducing reform has been to change indexation formulas. Many countries have gone from wage indexation to less generous price indexation. For example, the UK converted to price indexation already in the beginning of the 1980s. More recently, in Japan, this was a component of the cost-cutting package legislated in early 2000. Countries are also raising the full-benefit pension age. As early as 1983, the US legislated a gradual increase to age 67 to be reached after the turn of the century. In Germany, special (seniority) rules will be gradually eliminated and the full-benefit pension age will become 65, with a possibility for continued revaluation past the age of 65. The Japanese reform package also proposes increasing the pension age for the earnings-related part of the Employees Pension Insurance (EPI) from 60 to 65, gradually over the period 2013-2025 for men and 2018-2030 for women.

Countries have also tightened the links between benefits and lifetime earnings and contributions. For example, already in 1986 the UK changed the SERPS to a career based average instead of the best 20 years. France is changing the calculation basis for a benefit from the best 10 to the best 25 years of earnings, and increasing the number of contributory quarters needed for a full benefit from 150 to 160. Italy went from a 5-year earnings basis for calculating benefits to an entire career (depending on the scheme), for persons still covered by the “old” system. Italy and Sweden have developed and implemented the idea of the Notional Defined Contributions (NDC) pay-as-you-go account system, which introduces a full link between benefits and contributions.

**NDC PAYGO has emerged.** Extending the years of coverage required to receive a full benefit helps bring down costs in DB systems, but only goes part way in managing the risks of early exit and increased life expectancy. The NDC-PAYGO system legislated in Sweden (1994) and Italy (1995) is designed to manage these risks directly. The appeal of the NDC account system is that it is a PAYGO scheme that emulates the principles of a DC scheme – but only relying on demographic funding. It provides a middle road to the bipolar conflict between traditional PAYGO DB-systems and fully funded DC financial account systems that continued to dominate the pension debate into the 1990s.

**What is NDC PAYGO?** In the NDC PAYGO system wage earners pay contributions based on a fixed contribution rate and the value of these are accredited their notional accounts – this is the defined-contribution feature of the system. Contributions are paid on earnings as long as people work. The previous year's account value is indexed annually with a nominal per capita wage index in Sweden\(^7\) and GDP in Italy. Information about changing life expectancy and, given an individual’s account record, its

---

\(^7\) This will be supplemented, however, with a downside brake based on the contribution wage sum, and which will affect both the indexation of notional capital and benefit payments. (See Palmer (2000).)
effect on an annuity claimed at a specific age is available at any time in the Swedish administrative set-up. In other words, changing life expectancy is a parameter that can be taken into account in individual decisions about when and how to exit from the labor force. In principle, the NDC structure makes it possible to claim any percent of a benefit at any time after a legal minimum age for eligibility. People can combine a full or partial NDC benefit with work (and continuing to contribute and acquire new rights), and then get a recalculated benefit at some later date.

The NDC benefit is calculated by dividing the value on the account at the chosen time of retirement with a factor based on unisex life expectancy. In addition to this, in Sweden a real rate of return of 1.6% and in Italy 1.5% is calculated into the annuity. This form of front-loading is an alternative to possible wage indexation (from a lower initial level) over the lifetime. Annuities are also indexed to annual changes in prices in both countries. Annual indexation in the Swedish scheme also includes an adjustment for digressions of actual real growth from 1.6%. This keeps the aggregate contribution rate in line with the individual contribution rate of 16%.

Proponents of the NDC PAYGO formula claim that it represents a paradigm shift in social security thinking (Palmer 2000). By creating a direct link between contributions and the annuity and by basing the size of the annuity on life expectancy at retirement, NDC systems reduce the impact on system costs of individual behavioral choice and of unexpected changes in longevity. In the DB framework the burden of the risk is unclear. It may fall on future generations of workers or on present workers before they retire. Finally, it is important to note the following about NDC account systems:

- Fully funded DC-systems insulate by definition against labor supply fluctuations. PAYGO systems do not provide natural insulation. But NDC PAYGO systems, with demographic reserves and indexation of capital and benefits that follow the growth of the contribution base, yield approximate long-run financial stability (Palmer 1999a). Both funded DC-systems and NDC-systems rely on good life expectancy projections, and require adjustments somewhere when life-expectancy factors are systematically under- or overestimated. Under specific circumstances, other forms of indexation in the NDC system, for example price indexation of benefits, may also work.

- NDC PAYGO systems with or without advance funding are subject to the same “political risks” as DB PAYGO – “political” management of public funds causing low rates of return, special interest lobbying, etc. For example, in Italy, the rate credited into the notional account is actually higher than the payroll tax earmarked for pensions, while in Poland it is lower. What the NDC provides is a framework for monitoring the costs of these interventions. (See Fox and Palmer 1999.)

---

8 In principle, the Italian system should achieve a long-term equilibrium around the weighted contribution rates of the employed and self-employed if contributions and accrual factors are brought more in line. In practice, the absence of a mechanism to offset chronic divergence from the imputed return of 1.5% may lead to financial difficulties. Palmer (1999a) examines the stability conditions of the NDC PAYGO system, as does Valdes-Preito (1999).
The NDC contribution still has the tax element of any PAYGO system if the net rate of return on financial investments (after administrative costs) is higher than the rate of return on the notional account.

In sum, OECD countries have not moved aggressively to address system cost and stability issues. Since the UK introduced “contracting out” of the earnings-related PAYGO SERPS, Sweden and Australia have been the only countries to create a component in the mandatory system with DC-funding through individual financial accounts. NDC- PAYGO -- an explicit, rule-based scheme, with benefits linked to life expectancy – has been the most significant solution for the OECD DB conundrum that has been developed to date, and it has been adopted by Sweden and Italy. The idea of creating a benefit formula that is directly responsive to changes in longevity has also been discussed in the legislative bodies of other countries, for example Germany and the US, but to date has yet to be adopted.

The increasing debt implicit in the continued application of the current PAYGO rules in many countries will eventually lead to higher contributions for workers and/or higher income taxes for both workers and pensioners. While these same high implicit debts are an obstacle to the introduction of extensive DC funding, the possibility of further innovation in OECD countries should not be ruled out.

Transition Countries of Europe and Central Asia

*The background.* The transition economies include a large number of countries along a broad spectrum, from the Czech Republic and Slovenia, which are relatively well-off, to the very poor, for example Armenia and Georgia. Within countries, the distribution of earnings spread out dramatically during the first decade of transition, and, generally, poverty tends to be high, especially in the rural areas. System dependency ratios dropped from around 2.5 workers per pensioner in the 1980s to around 1.5 in the 1990s.

The transition from centralized to market economies brought new issues to the pension reform discussion, and new solutions. Briefly, the new issues were:

- **High initial implicit debt.** Acquired rights and commitments to benefit recipients were unchanged after the transition, but the means at the disposal of governments to collect revenues to meet contemporary and future commitments had changed dramatically.

- **Weak administration capacity.** Administrative institutions that could work in a market economy needed to be established.

- **Falling number of contributors.** Following the breakdown of the command economy, the covered wage bill remained relatively high in the wealthier transition countries, (central Europe), but fell dramatically in the poorer countries, (the former CIS). This was brought about by a fall in economic activity, a decline in female labor force participation, and considerable movement into the informal economy.
• **Many special groups.** Legacies of special privileges for selected groups created problems in moving towards mandatory pension systems suited for the market economy.  

• **Low retirement age.** In all the post-Soviet and Eastern European countries but Poland, the full DB-pension age was 60 for men but only 55 for women, even though the gap in life expectancy between men and women is 7-10 years, and the labor force participation of men and women up to the pension age is often about the same. In addition, the special privilege of early retirement afforded many groups lowered the average effective rate of exit from the labor force even more.

The picture emerging in the 1990s was not entirely bleak, however. One reason was because with transition came also public anticipation and demand for market-oriented change. Another is that demographic pressure will come later than in the OECD (see Table 2), providing a brief demographic window of opportunity for system reform.

What have countries been doing? Initially, policy was largely reactive. Countries were forced to trim benefit payments to meet financial resources. The general result was the emergence of flat benefits with price indexation, when this was affordable. In poorer countries, even after stabilization, benefits still depend on whatever means are available, rather than adherence to benefit formulas. As the 1990s progressed, however, policy became proactive.

A first step taken was to phase out privileges to special groups. Two approaches emerged. One is to discontinue granting new rights and convert rights already acquired in the old scheme into rights in a reformed public scheme. This is the approach most countries have followed. The other is to convert acquired rights into newly created occupational schemes. The approach was followed in Poland, converting the acquired rights of a large group of miners into an occupational scheme. (Chlon, Gora and Rutkowski 1999).

Increasing the retirement age has proven to be an especially difficult issue. Hungary was among the first countries to successfully introduce a gradual increase to a higher normal retirement age (62) for both men and women. Croatia has followed. These are the exceptions, and not the rule. For example, proposals to equalize the pension ages of women and men in Poland and Russia were met with vociferous defense (and maintenance) of the status quo. Latvia provides another example. In 1995 legislation scheduled an increase of the minimum pension age for women by a half year per year to

---

9 For example pensions were given at an early age (as early as 40) instead of higher wages for persons who had worked in hazardous occupations a certain period of time. Pensions also performed the function of social transfers (or tax deductions) for workers in market economies, for example a right to retire early as remuneration for being the parent of many children.

10 In Poland the pension ages were 65 and 60, but men could retire early with 40 years and women 35 years of recorded service (work or an equivalent). This, together with the special treatment of some groups, for example miners, explains why the de facto age of exit with a benefit in the 1990s is around 56 for women and 59 for men.

11 Poland attempted unsuccessfully to introduce a minimum pension age of 63 for both men and women as a part of the 1998-reform.
the age of 60, but amidst protests the next Parliament changed their minds to allow women to continue to claim small pensions from age 55. As a result most women had claimed an actuarially reduced benefit by age 56, often at the very minimum of what people can live on alone. These women will eventually outlive their husbands by around seven years. Unfortunately, this pattern, which is similar in many of the transition countries, is likely to increase the number of long-term poor\(^{12}\) (Castel and Fox 1999).

In the mid-1990s, countries began to work on systemic changes. In legislation passed in 1995 and implemented in 1996, Latvia became the first country to reengineer the first-pillar by converting PAYGO commitments acquired under the previous regime into NDC PAYGO accounts. In 1997, Hungary legislated the next systemic reform, linking contributions to benefits through the introduction, in 1998, of a financial account system to supplement the PAYGO system. New entrants were mandated into the financial account system, but current workers were given the choice of either remaining entirely in the PAYGO system or entering the financial account system. For a worker in the new system, 1/3 of the PAYGO system is replaced by a financial account with a pension fund (Palacios and Rocha 1997). During the choice period, people were provided with information to help them decide which alternative was likely to be best for them. In 1997, Kazakhstan became the first (and to date only) transition economy to follow the example of Chile in phasing out the public PAYGO system after a transition period of paying off current acquired rights.

In 1998, Poland passed legislation for an NDC reform of the old PAYGO scheme, topped by a mandatory financial account system that in time is aimed to give a 50-50 split of contributions between the NDC and financial account schemes. With implementation in 1999, Poles under 30 years of age in 1999 were mandated to participate (with a 9% contribution rate) in the financial account system, and persons 30 to 50 were given the option to join.

In 1998, Croatia chose to reform their PAYGO pillar along the lines of the German point system, and in 1999 legislated a funded pillar on top, to be implemented in 2001.\(^{13}\) In Croatia, the second pillar is mandatory for persons under 40, and optional for persons 40-49. Latvia followed up its NDC reform with financial account legislation passed in early 2000. In 2001 Latvia will begin to phase in a 50-50 split of a 20% contribution rate between the NDC and financial account schemes, mandating participation for those under 30 at the time of introduction, and enabling those age 30-50 to choose. All countries moving in the direction of NDC and financial account systems have retained or created a minimum guarantee of some form.

Kazakhstan, Hungary, and Poland have followed Latin American in providing

\(^{12}\) In fact, with wage growth of 4%, which Latvia is now experiencing, the new NDC system greatly enhances notional accounts, and together with a more favorable life expectancy factor, every additional year of postponing a benefit yields a substantial benefit improvement, even if individual earnings stagnate or fall. Latvia has recently taken steps to close this loophole. (See Fox and Palmer (1999).)

\(^{13}\) Croatia, Hungary, Kazakhstan, Latvia and Poland are all either average or above average income countries within the group of transition economies (per capita GDP ranges from around $2000 in Kazakhstan and Latvia to $6000 in Hungary and Poland), with a ratio of the covered wage bill to GDP that is – for transition economies – among the highest at around 30% (Rutkowski 1999).
participants in financial account systems a choice between a limited number of funds, whereas Croatia and Latvia will employ the clearing-house model,\textsuperscript{14} which as the systems develop will enable individual choice among a number of investment funds. Yet another innovation in the Latvian Pillar 2 legislation is the option at retirement for the individual to choose between purchasing a market annuity or transferring capital from the financial account into his/her NDC account.

Other countries have developed systemic reforms of their Pillar 1 systems, without including a Pillar 2. These countries have reduced the avenues for early exit, especially among special groups, and tightened benefit formulas in earnings-related PAYGO systems. Examples include the Czech Republic (one of the first to phase out special privileges), Estonia, Georgia (flat pensions and a jump in the pension age by 5 years in one go), Kyrgyz Republic (an NDC system), Lithuania, Moldova, and Romania. Several of these countries are now considering how to add funding to their systems, using the fiscal space created by the reforms.

\textit{Issues.} Although there has been a wave of innovation in some of the transition countries, reform has been slow in coming to the majority of the population in this area (mainly because Russia has not yet reformed). The coming decade is likely to bring even more innovation, in both the low and high-income transition countries of this region.

The challenge for transition countries is to design benefit systems so as to minimize long-term free rider costs by providing incentives for younger workers on the fringes of the market economy to participate, yet provide security for current workers on the margins of transition. This implies linking benefits tightly to contributions for younger workers, creating a clear message to those who do pay their contributions, possibly increasing coverage and revenues in the long run.\textsuperscript{15}

In parts of the transition region, even if earnings-related schemes are introduced, a majority of the population may be largely or wholly outside the system owing to growing urban informal and rural private agriculture sectors. One of the most urgent questions is how to finance the impoverished aged. The situation may become more acute as younger family members leave home to take jobs in more economically dynamic regions. Whether poverty support is provided through some form of guarantee or flat-rate benefit (demogrant) there is a question as to what tax instrument to use to accomplish redistributional aims – while encouraging high compliance in the earnings-related schemes.

\textsuperscript{14} This model is discussed in greater detail below.
\textsuperscript{15} There is no evidence yet that the introduction of NDC or funded DC financial systems has led to an increase in the number of persons covered in these countries, although this has clearly been one of the hopes of the reformers. In fact, evidence from other parts of the world, for example Chile, is pessimistic on this account.
Latin America

The background. The last five years have seen an explosion in pension reforms in Latin America. This occurred for several reasons. The most important was that the successful stabilization programs of the late 1980s and early 1990s exposed the weaknesses of the PAYGO systems which had been obscured by high inflation. High inflation had obscured the growing fiscal cost in two ways. First, it constantly eroded the real value of benefits granted to an affordable level, because benefit adjustments rarely kept up with inflation. Second, in most systems, benefits depended on the last 3-5 years’ earnings, and these were also eroded by inflation. As a result, actual replacement rates were far from the promised replacement rates – until inflation stopped. As coverage was not growing rapidly nor were covered real wages, system deficits emerged. These deficits threatened the gains from the painful stabilization. Latin American systems usually had extra benefits for privileged groups. Ironically, the democratization of the 1980s increased pressure to make these special benefits universal, but this was also unaffordable.

So in the 1990s, the pressure to reform was strong. At the same time, the Chilean model seemed to be a success. Savings in individual financial accounts were accumulating high rates of return in Chile, suggesting that workers could look forward to good pensions at retirement. Meanwhile piecemeal reforms in Argentina - the reform leader of the second wave - had failed. An intellectual consensus around the benefits of a second pillar as well as constituencies for reform in the younger generations were developing in the region. Reform leaders liked the micro-economic incentives an individual account system offers, with a life-time contribution-benefit link (lacking in most of the region’s DB systems). They also liked the potential for capital market development, as now stable financial systems sought to tap regional and global financial markets.

What have countries been doing? The lead reformer, Chile, basically kept its existing system, which channels 10 percent of wages into pension fund companies, which hold them in individual accounts. These companies (AFPs) are regulated by a separate regulator, and the government does not participate in the collection of benefits. A minimum relative rate of return guarantee is provided (AFPs are restructured if they do not meet this regulation). There is a minimum pension guarantee offered by the government. Acquired rights in the old system were capitalized into no-coupon bonds carrying a fixed rate of interest which are redeemed at the time of retirement (a continuing liability of the government). Those in the labor force at the time had the option of remaining in the PAYGO first pillar, but no new entrants to this pillar were allowed. Thus, the explicit PAYGO system will end in Chile sometime in the coming half century.

The first reforms did not follow Chile to the letter. The first reformers were Argentina, Colombia, and Peru, followed closely by Uruguay in 1995 (Schmidt-Hebbel 1999). Mexico and Bolivia joined in 1997, and El Salvador in 1998. Most of the early reformers

---

16 This section draws from Queisser (1998) and Schmidt-Hebbel (1999).
17 The other 4% of the 14% payroll tax is used for survivors and disability insurance, and administrative costs.
adopted a blend approach. Two kinds of blends emerged.

- The first type is similar to that observed in Europe, and is seen in Argentina and Uruguay – a PAYGO first pillar, combined with a modest second pillar. In Argentina, the first pillar is flat, whereas in Uruguay it increases with contributions. In Argentina, the second pillar is optional; contributors can have the earnings related portion of the pension come from the a scaled back PAYGO system.

- The second type of blend is a choice of pillars. In Peru and Colombia, contributors are either in the first pillar (scaled back PAYGO) or the second pillar. In Peru, once in the second pillar, participants must stay there, but Colombia allows shifts back and forth.

Surprisingly, after these blend models emerged, the next reforms were all second pillar-only reforms – Mexico, Bolivia and El Salvador. No choice was allowed for new entrants, nor were combinations possible. The Chilean model was moving north.

*Key issue: The design of the second pillar.* Latin America shows a surprising consistency with respect to the system design features. All countries except Bolivia adopted the basic Chilean model for second pillar design – private pension-fund firms, or AFPs, compete for the right to manage individual accounts. At the outset, all countries issued tight regulations with respect to allowable investments (with a heavy concentration on bonds and on national assets), although there has been some loosening as systems gain experience. Two main innovations are noteworthy:

- centralized contribution collection, and
- integrated supervision of private fund managers.

Centralized contribution collection was first introduced in Argentina. In the Chilean model, employers withhold contributions from employees, and pass them on to the pension fund of the employee’s choice. In Argentina and Mexico, the employer remits the funds directly to the national revenue agency. This innovation emerged as a response to the high costs of the Chilean pension funds (AFPs). It was also supposed to help increase coverage, as one tax agency monitors all payments, and can track down evaders. Practice may not be yielding the desired cost savings, however. In Argentina, collection costs are even higher than in Chile and coverage is no better. (DeMarco and Rofman 1998). Bolivia, however, boasts better results, which are attributed to the tax collector being a private firm under contract from the government (von Gersdorf 1997).

Chile created a separate agency to supervise the new AFPs as a part of the reform. The main reason was doubts about the other financial sector supervisory agencies. These doubts bore fruit in the ensuing banking crisis of the early 1980s. However, creating separate agencies is costly, and flies in the face of the increasing integration of financial markets (Taylor and Flemming 1999). Later reformers have attempted to add the AFP supervisory function into existing supervisory agencies (Colombia, Uruguay and Bolivia).
Two models are emerging. The Argentinean and Bolivian reforms illustrate well the two different models emerging. Argentina had one of the highest implicit pension debts in Latin America at the time of the reform, as in 1990 it had a ratio of the elderly to the working age population (65+/15-64) of 14.8 %, close to for example, Australia or Canada in the OECD. Payroll taxes of 21 percent were not covering system costs, estimated at about 5 percent of GDP. Without a strong fiscal surplus or any prospects of windfall revenues from new, unexploited resources, Argentina had no prospects of moving straight into a fully funded system. Argentina raised the contribution rate to 27 percent, keeping 16 percent in the PAYGO system, with the rest in the funded system. Acquired rights under the old system were mostly honored, and will be paid off as contributors retire (compensatory pension). This is expected to be cheaper than the Chilean approach with issues of compensatory bonds, since the rate of return to existing rights is not fixed in real terms in advance, and the pension is only paid to those who live to retirement. On the other hand, the longevity risk is borne by the government, not the individual. New PAYGO rights are related to years of contribution only, not the individual contribution wage. The funded system transition is therefore mostly tax-financed, with a reduction in future benefits for participants contributing as well.

Bolivia is a much younger country, with a ratio of persons 65 and over to persons 15-64 of only 6.3 %. Pension costs were much lower, a modest 1.5 percent of GDP. In addition, privatization of energy and mineral resources was yielding a fiscal dividend. Bolivia moved completely and instantaneously to a second pillar system for all participants. Following the Argentina model, acquired rights in the old system will be paid at retirement. In addition, a special dividend will be paid to all those age 21 or more in 1995 at age 65 (the Bonosol). This onetime distribution of the privatization funds does not carry forward to future generations. The funds for the Bonosol are in special accounts, managed by the private AFPs.

Bolivia also had a relatively thin and inexperienced capital market in 1995. In order to insure that funds were well managed, Bolivia divided the country into two monopoly AFPs. (In all other countries in the region, there has been an open AFP process.) International firms competed to purchase these monopolies. The monopoly lasts for 5 years, after which the market is scheduled to open up for new entrants (von Gersdorf 1997).

Remaining questions. As a region, Latin American has been bolstered by its success in developing pension reform models. These reforms have succeeded in reducing pension debt and bring about more fiscally sustainable systems (Schmidt-Hebbel 1999). However, system coverage has remained at about where it was before the reform – with the exception of Bolivia, at about 45-60 percent of the active labor force (Packard, Holzmann, and Cuesta, 2000). This has raised questions about these reforms as social risk management systems. Related to the coverage question is the cost of the decentralized system. The magnitudes of the costs and the reasons behind them remain a controversial topic.
Asia

Background. With over half of the world’s population today, and facing rapid declines in fertility and increasing life expectancy, Asia holds many of the pension system problems for the 21st century. While most of the region is demographically young today, a rapid transition is predicted. (table 2) For example, in East Asia, the ratio of elderly to working age population is expected to triple over the next 40 years. In Sri Lanka, the proportion of those over 60 is projected to rise from the current level of 9% to about 20% in 2025. This transition is expected to occur at much lower level of income than in OECD or Latin American countries.

Asia has a wide variety of pension systems today (Table 1). National provident funds are quite common, as are Pillar 1 systems. Several countries exempted the public sector from the national provident fund system, and instead provide an unfunded or partially funded DB system (Indonesia, Malaysia, Sri Lanka). Coverage varies, and is not strongly correlated with level of development. For example, coverage is high in both in the high income countries of Malaysia (45% of the labor force covered) and Singapore (75%), and in low-income Sri Lanka and Mongolia (both over 50%), but is lower in Vietnam and India (about 10%) and the Philippines (29%). Most countries in the region continue to rely on informal, family-based systems to support the aging. These systems will be tested in the future with this rate of demographic transition.

Most of the fiscal pressure in the region comes from the unfunded PAYGO systems in the lower income countries. The unfunded civil service occupational pension plans, with large liabilities for the most part not yet costed out have been in particular difficulty. For example, in Sri Lanka, transfers for civil servant pensions are already 1/3 of the total government wage bill. Transition economy pension systems in Asia have all fallen into the same difficulties as those in Eastern Europe and the former Soviet Union. Pressures on government budgets from unfunded SOE liabilities are rising in China, (especially in the poorer provinces), and in Vietnam, where contributions already do not cover current outflows. The collapse of the Soviet Union and the resulting fall in income in Mongolia produced a fiscal crisis in this pension system. In the other countries with Pillar 1 systems there are substantial reserves, so short-term fiscal pressures are not motivating a major reform.

The most common criticism of Asian pension systems is of the asset management regimes. Not only do these tend to be not open to public scrutiny or accountability, but they also tend to require a high level of investment in government bonds or publicly held assets, which lowers returns. For example, average real annual returns to assets in plans in Sri Lanka, the Philippines and Singapore have all been under 2% per annum (they were negative in Sri Lanka), while income growth during the same period was above this level. (Iglesias and Palacios, 2000). As a result, benefits from the DC schemes are low, while the funding ratios on the DB schemes are dropping. For these countries, there have been pressures to relax investment rules and offer participants a choice of fund managers.

---

18 Much of the facts and background on East Asia are drawn from Holzmann, MacArthur, and Sin (2000).
Malaysia is a notable exception to this trend. Although the system is publicly managed, in 1991 and again in 1995, investment rules were relaxed, and the share of equities, bonds, and money market instruments in fund assets has risen to over 50%. Rates of return have also risen.

Other problematic issues for Asian countries include the existence of separate pension schemes for the public and private sector. Even where these systems still have reserves, labor mobility is impeded. Where separate public systems include SOEs, enterprise restructuring may be impeded. Equity issues may also arise with the lack of a national system as participants tend to have higher than average incomes.

What have countries been doing? Major reforms in Asia have covered the spectrum of reform possibilities. Thailand and India have gone for blends by adding or strengthening Pillar 1, while keeping Pillar 2 systems. In China and Mongolia, the PAYGO DB system is being converted to an NDC system. In Hong Kong SAR, an individual accounts Pillar 2 system is being added.

The reforms in Thailand and India extended DB plans to the formal sector work force, in order to complete the development of a full old-age security system. Both reforms were part of overall efforts led by unions to mandate comprehensive social insurance benefits. In both cases, substantial funding is envisaged to avoid fiscal crises caused by the demographic transition. This will require public management of reserves of the DB systems for long periods of time. India already had a DB plan for civil servants and a less generous plan for the private sector. In 1995 the private sector employees’ plan was upgraded substantially. Thailand had a system of voluntary provident funds as well as a civil service pension scheme. Reforms over the last decade built on this foundation by (a) mandating the establishment of provident schemes in the private sector over a minimum size, and (b) adding a publicly-run, comprehensive social insurance program including sickness, maternity, disability and old-age pensions. The later were introduced in January 1999. In both cases, payroll taxes were raised to cover benefits.

As constructed, the systems of both India and Thailand could suffer from the problems of European and Latin American systems. Retirement ages are fairly low (late 50s, and India allows a length of service pension), encouraging early exit. Payroll taxes may encourage evasion, leaving coverage ratios low. Unlike Europe and Latin America, however, both systems are designed to be mostly funded. If the funds are invested in high yield assets and the benefits adjusted to changes in life expectancy, the type of benefit crisis common in Latin America could be avoided. This does not seem to part of the current program, however, leaving cause for concern. India’s track record to date on managing funds does not provide much optimism for its system. With most assets in government bonds and the postal savings system, returns have lagged economic growth.

NDC in Asia. NDC has proved a popular reform for the transition economies of Asia, despite very different initial conditions. China established the beginnings of a comprehensive national pension system in the 1950s. However, during the cultural revolution, pensions in China were declared the responsibility of the enterprise (with nationally mandated benefits) and the funds accumulated in the pooled system spent. (Pensions were called “retirement salary”). This system has proved to be a major
obstacle to reform of the state sector, as well as being an issue in fiscal decentralization (World Bank 1997). Since 1986, China has been trying to return to a national pension PAYGO system with intergenerational income distribution. In addition, China seeks to introduce funding into the system.

In August 1997 China set the framework for the national unification, set to take place over the next few years. It substitutes a new DB plus NDC PAYGO system for the current fragmented system. The DB section is a flat benefit equal to 20% of the provincial average wage (called the basic benefit). On top of this flat benefit is a quasi-NDC benefit. The system is not fully NDC because the benefits are not linked to life expectancy. Instead, the balance in the account is divided by 120 to compute the annuity benefit. This approach in effect assumes a life expectancy of 10 years for everyone at all ages, and as a result (a) may not be stable, and (b) encourages early exit. There are transition arrangements for those with 15 or more years of service, as the new benefit is less generous than the previous DB rules enterprises were supposed to follow (compliance depends on profitability). Partial funding is envisaged in the Pillar 1 system, but how this would happen remains unspecified. China’s strong economic growth rate and record of good fiscal management gives some scope for this to occur. Regulations supporting private Pillar 3 pensions are also pending.

The Mongolian NDC reform was approved in 1999, in the face of a continuing fiscal crisis. It does not have a basic benefit, but instead offers a minimum guaranteed benefit equal to 20 percent of the average wage with 15 years of service. Although this reform cut benefits significantly, contributions still do not cover current payouts. However, this situation is expected to be reversed over the decade as wage growth returns and obligations decline. Partial funding is envisaged for this system as well, possibly through the addition of a second pillar once the current spending level declines as a share of contributions.

*Hong Kong: an Asian-style Chile emerging?* While still under British rule, Hong Kong began considering the establishment of a national, funded pension system to supplement the existing Australian-style demogrant system (which is means tested). After considering the government-run provident fund model, Hong Kong in 1995 opted for a system of individual accounts to be managed by private fund managers. Preparations continued through the return to Chinese sovereignty. The system is scheduled to start in the beginning of 2001.

The Hong Kong system differs from the Chilean model in several important aspects. First, benefits will be lump sum, (and tax exempt). As a result, the annuity market is expected to remain thin. Second, the asset manager will be chosen and contracted by the employer. Employees may have their choice of funds, but only within the employer’s contract. This innovation is expected to lower both administrative costs of maintaining accounts and the costs of monitoring compliance by the authorities. It may have coverage consequences, however, as asset managers can not be expected to race to conclude contracts with small employers (especially those with low average wages). Supervision of asset managers will be handled by existing supervisory bodies, while compliance will be monitored by a new authority. Other regulations to control administration costs are currently being formulated. With this organization, Hong Kong
is combining the benefit features of the Asian model with the asset management features of the Latin American systems.

Summary. If Asian pension systems are converging toward a model, it is clearly a blend. Pillar 1 can take several forms- a classic European DB, a demogrant, or an NDC (transition economies). Pillar 2 for now is mostly provident fund, and mostly lump sum benefit. Hong Kong is the main exception, to this trend. Several transition economies are considering converting PAYGO obligations to individual funded accounts, but have not had the fiscal resources to do so. Major transformations have not yet taken place in provident fund systems.

Africa and The Middle East

Middle income countries. African and Near Eastern middle income countries have not embarked on major reforms. In part this is because the partially funded DB PAYGO systems in north African countries, South Africa, and the Middle Eastern countries still have enough reserves to get by over the time horizon of the average politician. For example, Jordan’s system for private employees has reserves estimated at 16% of GDP and saves on average just under 1% of GDP per year. (The public system is unfunded). In Morocco, all four systems (2 public, 1 private, 1 voluntary) have reserves ranging from 1/4 to 4 years worth of benefits. In addition, the countries are still young and rural, and informal old-age systems still function. Projections suggest that these systems will also become a fiscal burden without reform, but not until well into the next century (Boersch-Supan, Palacios, and Tumbarello 1999).

Low- income countries. Pension systems in most low-income countries (countries with a per capita income less than $700 per year) are in an infant stage. As can be expected, owing to the high percentage of the labor force in agriculture (on average, nearly 70 percent), most systems in sub-Saharan Africa are marginal in economic terms, often covering less than 5 percent of the labor force and expending less than 1.5 percent of GDP on pensions. The countries are demographically young, with an old-age dependency ratio (60/15-64) of 4.4% in sub-Saharan Africa (World Bank 1998).

In many countries, what is called a national social insurance system is actually a public employee’s pension scheme. These schemes can be quite generous, with full pensions often offered at 55 with as little as 10 years of service. In the more developed countries of sub-Saharan Africa, coverage reaches about 10% of the total labor force, extending into the formal private sector. In anglophone Africa, the predominant model is separate schemes for the public and private sectors, usually a DB, unfunded civil service scheme and a funded, DC provident fund scheme for the rest of the formal sector, mostly parastatal and foreign companies (for example Zambia and Kenya).

Several countries have large reserves for these systems. Generally, a major concern is the management of reserves. Iglesias and Palacios (2000) provide dramatic evidence that assets in low-income countries tend to be mismanaged. In Egypt and Zambia, annual

---

19 Singapore provides phased withdrawal options. Members can also withdraw a portion of account balances during working years for other investments (housing finance, medical savings accounts, etc.)
compound real returns trailed bank deposit returns by 8 to 12% on average. In Uganda between 1986-1994, the real annual compound rate of return was highly negative (-33.1%).

Reform is not a major topic on the policy agenda, as most of these countries, especially in Africa, are spending all their energies in a losing fight against hunger and disease in the face of secularly declining prices for commodities, their major exports. Nonetheless, signs of trouble are emerging. For example, in Kenya, 100 percent of contributions collected were spent on administrative costs in 1998 (Barbone and Sanchez 1999). In Senegal, payroll taxes for the pension system are 14 percent and total payroll taxes a whopping 35 percent, contributing to urban unemployment.

Issues. Countries face two related issues: (a) insuring long term equity and sustainability in the face of rapid demographic transitions, and (b) the management of reserves. The demographic transition is happening faster in these countries than it did in Western Europe (World Bank 1994,1998). For example, the share of the population over 60 is predicted to rise from 9 to 18 percent in 30 years in Egypt, while the same event took place over a 100 year period in Western Europe. Second, promised replacement rates are much higher than those found in Western Europe in the infancy of public pension schemes. Rates of 40-60 percent after 30 years of contributions are quite common, compared with about 20 percent in European countries before the Second World War. These high rates will rapidly put pressure on the DB schemes. Finally, as the full implications of the HIV/AIDs crisis is felt in the labor force, dependency ratios could rise sharply.

In the poorest countries, pension reform is primarily a public sector pay and employment issue, as coverage is so low and the wage economy so small that pension systems can not possibly be the answer to old-age poverty. The poor in these countries continue to rely on private transfers. Pension systems may actually be regressive, depending on the tax incidence and the public sector pay structure. Governments are reluctant to address this difficult problem, preferring to give in to public sector workers’ demands for generous deferred compensation. Even where employees contribute, those contributions have in effect gone back into paying their current salaries as the reserves have primarily financed public sector current expenditure. Strong public sector unions, used to rent-seeking, and powerful but corrupt public sector agencies which “manage” these funds will make this problem difficult to tackle. At the same time, with a rapidly aging population, elderly poverty is likely to emerge as a critical issue.

Reserve management will continue to be a difficult issue. Improvements in overall governance and in banking regulation, and reduced corruption in the public sector will be required to address these problems.

20 During apartheid, South Africa and Namibia put in place universal non-contributory pension schemes (demogrants) which continue to operate.
Part II: Emerging Models

The last five years have offered a wealth of experience in pension reform. Most reforms have been implemented in politically open systems, amid significant debate. Does this imply that models are emerging? This section looks at three areas where pension reforms are beginning to converge in the middle and upper income countries:

(a) the shape of the first pillar;
(b) the size of pillars and the financing of the existing pension debt; and
(c) measures to lower administrative costs in multi-pillar systems.

The next section looks at issues still subject to debate.

Building a Better First Pillar

Based on the experiences summarized above, sizable, contribution-related, state-managed, first pillars are here to stay in the OECD, in transition economies and probably in most other countries with a share of the population over 60 greater than 12 percent. But the shape of this first pillar is changing. As a result, reform of the first pillar is now seen not only as a pre-requisite to the introduction of a second pillar with financial accounts, but as the key overall reform through decreasing liabilities and thus implicitly increasing advance funding within the first pillar.

The most striking feature of the recent reforms of the first pillar is their central direction:

• They are trying to reduce early labor force exit by tying benefits to individual lifetime account schemes, hoping to replicate the labor market incentives of DC individual financial account systems, and

• as a result, reducing redistribution within the public earnings-related insurance system, both among age cohorts and within age cohorts.

In part, this result is driven by the large number of reforms in the transition countries, which have had a clear political will to reduce the redistribution in their systems, consistent with the drive to create a market economy and reduce the scope of the public sector. The NDC paradigm is the most explicit attempt to replicate the incentives of a DC financial account system, and it is being adopted in transition economies. In Latin America the trend is also away from redistributional privileges. Only Argentina has bucked the trend by creating a first pillar more redistributional than the previous system.

How important to economic growth and welfare are the objectives of reducing the labor market distortions of a redistributional DB system? Economic theory tells us that whether distortions really affect individual behavior depends on how flexible the labor supply of individuals is. If people can adapt their labor supply, tax wedges create distortions and affect incentives. People can supply more or less labor, but, provided they have the opportunity, they can also move in and out of the formal economy. Generally,
with output, capital and labor market imperfections, the theoretical results are less clear (Diamond 1997).

There are some important examples of distortions that should be taken into consideration. First, if the rate of return on PAYGO contributions is below the net rate of return on other savings, the difference becomes a tax, and if the individual were to choose freely how to use his/her funds, the investment alternative would be the preferred alternative. This is main argument for restricting the scale of the mandatory public system. Second, high payroll taxes paid by the employer can also raise the effective minimum wage, and possibly reduce the demand for labor – or at least taxed labor. Third, if people are forced to “buy” more coverage than they would freely choose (or need in order to stay out of poverty) and cannot borrow to offset this, the net result on their welfare is negative. If they can borrow, but only at a rate that is above the rate of return on paid contributions, an additional tax element emerges. This tax element may be quite high because poor households often face capital rationing. In poor households in middle income countries and in poor countries, people must be expected to put present before future needs. Their discount rate can be quite high, and may be upped even more if they have reason to expect much better times for themselves in the future.

As we have already discussed, for a selected group of OECD countries, Gruber and Wise (1999) make a strong case using empirical evidence that explicit and implicit taxes on work matter for the timing of exit from the labor force. In countries with a higher tax on staying, people tend to exit earlier. Their results demonstrate the importance of the whole system of tax and benefit incentives. The message is that generous systems promote early retirement in OECD countries – on average around 8 years earlier than what these days seems to be a universal goal of at least age 65. Early retirement for today’s pensioners costs future taxpayers, whose wealth profile is unknown. Reformers in the 1990s have approached this problem by implementing individual account systems. Note, however, that to date, middle income countries that have attempted to reduce the distortions through the implementation of individual account systems linking benefits strongly to contributions have not had much success in increasing coverage or participation (Schmidt-Hebbel 1999; Fox and Palmer 1999; Holzmann, Packard and Cuesta 2000). Most of the reforms are still new and there is no evidence yet on the effects of these reforms on age of exit from the labor force.

Redistribution to the lifetime poor and very low-income pensioners has not been eliminated in countries introducing lifetime account systems. Redistribution to the poor in old age has been made an explicit part of social policy, often financed with general tax revenues from the state budget. Redistribution commonly takes the form of a minimum pension guarantee, that supplements the earnings-related benefit (or provides a full benefit for an individual without an earnings-related annuity) or means-tested benefit. Universal flat rate benefits from a certain age can achieve the same goal, but have to be set high enough to achieve their purpose, and thereby are distributed to a large number of people who do not need them, and, where there is a trade-off, a larger earnings-related scheme for the same money would have been preferable.

Several authors have expressed concern about the effects of lifetime earnings-based systems on poorer women in the middle and upper income countries, who have low
wages and interrupted work histories. Even in OECD countries there is some concern that present support systems for low earners in old age have been tuned-down too much. For example, Disney (1996) expresses concern that the reforms in the U.K will push this group into poverty in old age. The purpose of guaranteed minimum benefits is to protect this group. Unfortunately, without massive redistribution, persons who are poor during their working careers are usually poor even as pensioners but hopefully not destitute if the safety net works.

Middle income developing countries outside of Europe and Central Asia have a distribution of income and wealth that is, by and large, much more unequal than in OECD countries. These countries need to be much more concerned about publicly mandated redistributions to upper income groups. DB PAYGO systems have clearly had that feature in these countries (World Bank 1994). Consequently, reforms of the PAYGO system using the models being developed in the countries reviewed here would most likely be welfare enhancing in these middle income countries.

In sum, there seems to be a political and economic consensus around reforming first pillar systems to offer labor supply and participation incentives similar to DC financial account systems, but without full funding, while retaining a small safety net. In addition, redistribution through special privileges for select groups is being reduced. The process of improving Pillar 1 in the desired direction is moving very slowly, however, especially where benefit outcomes are promised very early in the working life and prove politically difficult to change later. In all groups of countries, there are examples of countries where DB Pillar 1 promises are greatly out of line with resources, indicating that we are only seeing the beginning of a reform wave.

**Putting The Pillars Together**

Countries that have introduced multi-pillar blends in the latter half of the 1990s have tended to keep large permanent first pillars. This is quite different from the Chilean approach. In Chile, new entrants were not allowed to stay in the PAYGO system, and those with acquired rights who switched had their rights in the PAYGO system capitalized into recognition bonds, in effect freezing the present value of the rights. This approach (a) ensured that the PAYGO system would eventually close (an explicit goal of the Chilean reformers) and (b) fixed the government obligation to the switchers in real terms over time, as the bonds bear a fixed real interest rate. In many recent reforms, (a) the first pillar is not phased out, and (b) acquired rights are not capitalized. Even when the second pillar is fully operational, not more than 50% of the total contributions within the old-age system are designated for second pillar funds.

There are two reasons why other countries have not followed the Chilean approach. In Chile, government spending was cut in the years prior to the reform, yielding a surplus of 5.5% of GDP, which was used to cover most of the debt. Only about 1.5% of GDP per annum represented a double burden.\(^{21}\) The OECD and transition countries, as well as some Latin American countries, are demographically much older than Chile was at the

---

\(^{21}\)Valdés-Prieto (1997, p. 205). Note that his is 3.75 per cent of the covered wage bill, assumes covered wages are 40% of GDP.
time their reform was introduced. As a result, acquired rights of people under the existing schemes are much more significant, and a high fiscal surplus was not available. For example, in Sweden, entitlements of pensioners and workers together amounted to around 3.5 times GDP at the time the Swedish reform was being considered. Transition countries have similar implicit debts (Holzmann 1998a). This would be a sizable debt to capitalize.

Where some capitalization of debt is considered desirable, it is not obvious that the Chilean model of freezing the rate of return on these acquired rights is the best method. Instead, the real rate of return on the recognition bond could be set equal to the rate of change in the covered wage bill, which is the tax base for the system. This is tantamount to retaining the PAYGO format. To hedge demographic risks, the value of the bond could be indexed to longevity. This approach resembles the NDC system.

As the slogan for the Polish reform “Security through Diversity” suggests (Góra and Rutkowski 1998), combining the two pillars in the social security portfolio provides better security. Both pillars are associated with risks, and a mix of the two helps minimize the downside risks inherent in each. A recent paper by Orszag and Orszag (2000) argues that in the face of economic uncertainty on the future value of the debt, a mix of funding and PAYGO is the optimal choice.  

Various mechanisms have been used to phase in second pillar financial account systems. These include:

- reducing PAYGO commitments to pensioners – usually through changing indexation formulas,
- reducing PAYGO commitments to present workers – by tightening benefit rules,
- taking advantage of demographic cycles,
- moving other assets into the pension system to help finance the transition,
- collecting more contributions than are credited to individual accounts, which is just a form of general taxation, and
- reducing other forms of government consumption spending (creating a budget surplus to help finance old PAYGO commitments).

What are some examples? Preceding the introduction of the chance to opt out of the SERPS, the UK tightened the PAYGO benefit rules and went from wage to price indexation. Croatia, Hungary, Latvia, Poland and Sweden created room by tightening the benefit rules in the PAYGO pillars. The NDC formula introduced in the latter three of these countries means that persons with short work careers (usually people who have now been in the country all their working careers) and younger generations who live longer will get worse benefits than they would have with the DB-formulas the NDC system replaced. Countries have also increased the minimum pension age (for example Croatia, Hungary and Sweden), creating liquidity even in actuarial systems - associated

---

22 The same authors noted that the NDC system provides an excellent choice for partial funding.
23 Of course, younger workers can work longer to compensate for this.
with postponed retirement. Finally, workers who are mandated or can voluntarily choose to switch to Pillar 2 relinquish Pillar 1 rights, and this reduces PAYGO costs over time. In determining the size of the second-pillar, future dependency ratios have also played a central role. In the transition countries of Eastern Europe, as we have already seen, there is a “low-pressure” demographic window through 2010-2015. With the gradual introduction of the second pillar occurring in Croatia, Hungary, Latvia, and Poland, the burden on younger workers will be relatively light during this period, while the commitments to younger workers will be moved over to financial accounts in Pillar 2. Some countries may still have to tax-finance some of the transition, but the extent can be anticipated and taken into consideration as policy is formulated.

Finally, some countries are creating a larger second pillar by using privatization assets to fund pensions for current pensioners during the initial stages of the second pillar operation. Poland, for example, is using privatization assets to help finance the transition, as did Bolivia. In Sweden large PAYGO reserves accumulated in past decades will help pay for the baby-boomers of the 1940s, helping to keep transition costs within a fixed contribution rate for the NDC PAYGO and funded pillar together. To the extent that this does not work out, indexation will reduce NDC rights to workers, implying that - from the point of view of younger workers – the exercise is only meaningful if the rate of return in the financial market (after administrative costs) is greater than this implicit tax. Of course, the main reason why Sweden has introduced a funded Pillar 2, is to take advantage of this positive potential return.24

In Chile, Australia, and Kazakhstan full-scale transition to advance-funded systems with individual financial accounts is combined with various guarantees. In Australia, there is a universal means and asset tested income floor. Chile has a minimum pension guarantee for covered workers plus social assistance for the poor who are not covered. In Kazakhstan, there is also a minimum pension guarantee for covered workers. There are also some implicit costs of reform that countries may have underestimated, however. In Chile, where coverage is low, the future cost of the guarantee could be substantial, implying an increase in the tax rate on workers in the future. In fact, costs (future taxes) are likely to have been underestimated in other countries as well, among them the U.K., as we have already discussed, and Sweden. The reason is that minimum guarantees have been price indexed, and that as time passes there will be pressure to increase the floor in these systems.25 In the blend countries, however, the PAYGO system takes pressure off the guarantee, and helps make total future costs more transparent.

**Lowering Administrative Costs of Individual Financial Account Systems**

Probably one of the most important debates around individual financial accounts over the last five years has been around the costs of these accounts – as much as 1-2.4% of wages,

---

24 Note that as the reform process evolved during the 1990s in Sweden both blue and white collar private (quasi-mandatory) schemes also converted to individual DC financial accounts, encompassing almost all the private sector employees.

25 On the other hand, the argument for separating out redistribution from social insurance is that proposals to change guarantees can be weighed against alternative uses of taxes within the normal political process.
annually (Schmidt-Hebbel 1999). With these cost levels in mind, Diamond and Valdés-Prieto (1994), asked whether it is possible for system designers to strike the right balance between availing the apparatus of the public sector to save costs but taking on the greater risk of political influence on investment decisions.26

In the early 1990s, Chile, the UK and Australia provided three models of how to design advance-funded systems with individual financial accounts. Chile and Australia seemed to provide the options for mandatory systems, while the UK could be said to have shown the way for voluntary or “opt-out” systems. In the Chilean model, individuals choose from around a dozen authorized private fund managers. Each manager manages one fund and offers a choice at retirement between various annuities or programmed withdrawal. The Australian model differs from this in that a large number of fund managers (around 8000 organizations) may offer a choice of two or more investment funds, but the employers, rather than the workers, choose the fund manager. On the product side there is a choice between annuity products or a lump sum (Thompson 1999). In the UK individuals themselves are allowed to choose among a great number of investment managers, each of which could have many funds to choose from (the so-called unit-link model). In addition, insurance products range from lump sum or programmed withdrawals to various annuities. Of the three models available in the beginning of the 1990s, this system provided the greatest freedom of choice to individuals.

To understand what has happened as the 1990s progressed and where the innovations are, it is useful to view the administration of advance-funded insurance with individual financial accounts as consisting of separate tasks. These are collecting contributions, performing transactions and keeping accounts, managing funds during the accumulation and annuity phases and annuity provision (actuarial services, customer relations, payments, etc). We examine these, one at a time.

Contributions. Generally, in mandatory individual account plans, contributions are remitted by employers (and the self-employed on behalf of themselves). The employers can either remit the contributions to the tax authority along with other taxes, or directly to the investment manager. In the first case, the advantage should be a minimization of costs for businesses and for the government. The argument is that if the tax authority is already collecting part of the contribution (to the PAYGO pillar) there is essentially no marginal cost of also collecting contributions to the second-pillar. The disadvantage is that there may be a lag between payment of contributions and remittance to the investment manager. In the second case, the advantage is that the money goes straight to the investment manager. The disadvantage is that (a) monitoring compliance is much more difficult,28 and (b) economies of scale in record keeping are lost. In principle, technology can help to overcome both disadvantages.

---

26 See James and Vittas (2000) for a discussion of these costs.
27 Many of the technical details in this section are based on the comprehensive tables presented in Thompson (1999).
28 In countries where there are separate institutions collecting revenues and contributions for mandatory systems, each agency must perform its own audit of an employer’s accounts. This creates extra costs for both employers and the public sector. An additional complication arises if the tax base for the various revenue/contribution systems differs.
Countries introducing individual account systems in the 1990s have generally entrusted contribution collection to the government (for example in Uruguay, Argentina, Sweden, Hungary and Poland). Other countries where second-pillar legislation is being formulated (for example in Croatia and Latvia) are also choosing the centralized model. The cost-efficiency argument has constituted a strong case for putting the collection of all public revenues and social insurance contributions under one roof.  

Has this cost efficiency argument been correct? In Argentina, the answer is clearly “no”, although it is hoped that with the new information system recently installed, this will improve. There is a lack of analysis of other countries. In Europe (of direct relevance here in Sweden and the UK) contributions are only remitted to investment managers annually (with an actual lag of 18-24 months). The latter occurs in part because employers are only required to remit information to the tax authority on an annual basis (although they make preliminary contribution payments more frequently), and in part because it takes about this long to process and establish legally the final taxable earnings of all citizens. Here, it appears to be the existing legal structures and accompanying accounting systems of the UK and Sweden rather than new thinking in this area that has determined the current course of events. In this case, questions need to be raised regarding financial returns lost.

Transactions and account keeping. In Chile, Australia and the UK the investment managers keep the records on individual account balances. This is logical if the country is following the standard insurance model, where the investment manager and the insurance provider are simply two sides of the same insurance business. However, the investment side of the insurance business is traditionally separated from the provision of annuities. As a result, the question arises, since the market is full of mutual funds, why not let people choose any mutual fund registered to do business in the country? Since the choice of fund is voluntary, persons with a high degree of risk aversion will be free to choose conservative funds, and persons who want to take greater risks can do this too (Srinivas, Whitehouse, and Yermo 1999; Shah 1996). This is the Swedish approach.

In order to minimize transaction costs in investment management, Sweden introduced the idea of the public clearing-house. The public clearinghouse (the PPM) is a public broker that performs net transactions vis-à-vis registered funds (the number of which is, in principle, only limited by the interest of funds themselves in participating in the system). The fund managers have only one customer, the PPM, and the PPM keeps the accounts for all individual participants. This limits the costs of fund managers to managing funds and enhances the possibilities to monitor the system. Funds compete by offering the best net-of-cost returns. The clearinghouse manager requires that all funds report fund

---

29 It is sometimes argued that the advantage of separating collection of, for example, general taxes, health care and pensions is that potential evaders might be more inclined to pay health care and pension contributions than general taxes. This type of tax competition has a negative effect on overall expenditure management, however.

30 In Sweden, about 90 per cent of all returns are processed almost immediately. The lag arises mainly in processing earnings from self-employment.

31 It makes it impossible to compete by offering gifts, and offering (unnecessary) personalized sales services (home visits etc.). In principle, we should expect advertising to focus on financial information and portfolio strategy, although we will not know until people can make their first choices in the year 2000.
returns and costs according to the same principles, and makes this information available to all participants. Two countries, coming after Sweden -- Croatia and Latvia -- are both working with the Swedish clearing-house model.

Little empirical evidence is available on the cost savings of this approach. Thompson (1999) offered some estimates given published knowledge about costs for various models, using standardized assumptions about earnings careers and portfolio returns. Using his assumptions, a system with efficient centralized administration, a clearing-house approach, a choice limited to a few index funds and centralized annuity provision reduces gross benefits from DC account proceeds by 5%, whereas a system with decentralized administration with a Latin American annuity mandate reduces gross benefits by 25%. These estimates can be viewed as lower and upper bounds, and indicate that there is room for improvement on the costs compared with the initial Latin American results. The lower bound is achieved at the expense of providing minimal choice, which can be questioned. In fact, there are many arguments against having a few big index funds in a small and developing financial environment – unless they were competing “world-based” index funds with relatively few investments in the local market.

Annuity provision and payment. Two models of the administration of annuity provision have also emerged. In all the main models prevailing in the early 1990s, the worker chooses the annuity provider. Even here, however, there are possible limitations on the freedom to move from one provider to another. For example, these may take the form of high costs borne by those who make such a decision. 32

The Swedish model diverges from the others on this point. In the Swedish model, the government is a single provider of all the annuity products offered. Consequently, the government also administers the payment of the second-pillar annuity together with the public PAYGO benefit. On the one hand, at least in principle, the Swedish model clearly limits the potential choice of annuity products available to individuals. On the other hand, the typical insurance problems associated with adverse selection cannot arise

To conclude, the trend has clearly been towards centralization to keep costs of administration down. Central collection by the national tax authority, the clearinghouse for transactions and account keeping and the government annuity monopoly all work in this direction. As with other innovations, empirical evidence on the effects remains weak.

32 Thompson (1999) claims that this can be a problem in the UK system. This is not the case in the Latin American systems.
Part III: Open Issues

Given the variety of countries in the world and their economic and social differences, it is not surprising that a number of issues in the design of pension systems are far from settled. Indeed, in some parts of the world (for example East Asia), the debate is still a very young one. This section looks at two issues that are still the subject of wide discussion and debate around the world. The first asks (a) what are the exogenous and endogenous risks to public pension systems, (b) how, from a social perspective should these risks be shared, and (c) what are the tradeoffs? The second section focuses on questions for low-income countries, where over 50% of the world’s work force lives, but is not covered by public pension systems.

Who Bears The Risk?

Risk sharing is one of the most controversial aspects of public pension systems. Pension systems are subject to the following main risks to long term financial stability and their ability to offer income security to participants:

- long term demographic shifts;
- economic risks: shocks or periods of slow growth;
- moral hazard risks: the behavior of individuals and employers is affected by system design; and
- political risks: design features offering short term political gains can cause system financial insolvency.

The first two are usually exogenous to the pension system, while the second two are endogenous.

Looking back, it is usually clear who should bear the costs of the exogenous risks after they occur. For example, it is obvious that the post-war generation should have transferred income back to the previous generation, who suffered a world depression and war. Likewise, it is obvious that older generations bear the cost, and younger generations the benefits of the transition to the market economy in Europe and Central Asia. But how much should be promised to the baby boomers by their children in middle income countries today is not so simple, nor is it easy to predict the expected real cost. Should the system allocate these risks in advance or allow the electorate to work it out as they become known? Pillar 1 systems offer a range of opportunities for intergenerational risk sharing in the face of major shocks. Without some floor or minimum, Pillar 2 systems allocate all the economic risk, short and medium term, to the contributor in individual accounts, and to the age cohort in provident fund systems.

Demographic risks are difficult to allocate fairly \textit{ex ante}. DB systems allocate the risk to the “funder” – in PAYGO systems, this is the next generation. Again, it is difficult to know in advance whether this will be fair. Yet, if it is unfair, it is difficult to correct. Changes in the indexation system are the only tool governments have once pensioners are near pension age or pensions are in payment, as it is almost impossible politically to
lower pensions by other means. Even changing indexation systems can be difficult. DC systems allocate the demographic risks mostly to participants and their generation. Annuities, computed at the time of retirement, reflect changes in life expectancy. If there are imperfect annuity markets, risk pooling may be incomplete, lowering welfare.

The second two risks are a function of system design. We have argued elsewhere that DB systems have a tendency to make these risks worse because of the focus on outcomes rather than costs, whereas individual accounts systems can make the costs of poor design more transparent. In addition, benefits reflect individual labor force participation, which means that the individual him/herself – and not other workers in any generation - bears the risk of early exit. (Fox and Palmer 1999). Advance funded, privately managed DC systems take a big step towards reducing the endogenous risk of PAYGO pension systems - that promises are made without also stating the source of finance - but there are also examples of funded schemes that have gravely misjudged their future liabilities. NDC PAYGO moves a big step in the direction of advance funded DC systems.

Critics have complained that public individual account DC schemes force the individual to bear too much risk, for too low benefits. It is true that NDC PAYGO and/or funded individual financial accounts have all created greater clarity in who bears the risks. The answer is clear: the worker bears the risk. Early exit from the labor force affects the worker’s own benefit and in a transparent way. This cost can not be shifted forward to another generation, or to members of the same generation, so workers will resist employer’s attempts reduce their labor force participation. The worker will be informed and can also determine his supply of labor and saving according to personal preferences, and the gradually increasing life expectancy of his/her generation (assuming some risk pooling in annuitization). In sum, how the individual risks are to be borne and what are the costs of insuring these risks,-- the “rules of the game” -- are more transparent in DC than in DB systems.

Is this a good risk sharing? Somebody or some generation has to bear these risks. The evidence on DB-systems is that:

- In OECD countries, behavior has changed in response to incentives, and workers and employers have collaborated to reduce labor force participation, thus increasing costs to the financiers (those who continue working and the next generations); and
- few systems have been able to make the current generation adjust to risks once they are realized, even if that generation has the means. Costs are pushed forward onto generations that may not have the means to pay for these obligations.

In Latin American countries, (for example in Argentina) the DB systems hid their full costs until benefits had to shrink dramatically. In this case, the generation paying to insure the risks demanded a change.

Is everyone able to cope with the exogenous risks if the endogenous risks are minimized? Many societies believe the answer is “no” for the poorest, and so build some safety net or guaranteed minimum into individual account systems. This guarantee is less common in
provident fund systems. Blend systems also build in safety nets (adding endogenous risks). One thing is clear. In order for a worker to make more informed judgements, he/she has to be informed. Especially in transition countries, this aspect has been a problem (Fox and Palmer 1999).

**Expanding Coverage: what to do about low-income countries and low-income groups in middle income countries?**

The risk sharing issues discussed above take on a new flavor in low-income countries, where coverage is low. In this case, it is rarely the poor who are benefiting, so the arguments for inter- and intra-generational risk sharing can not be made on social grounds (although they often are). Those who are covered are those within their generation most able to bear the risks, and the arguments for shifting risks forward are certainly not clear *ex ante*. As a result, the argument for DB systems is quite weak.

Pillar 1 pension systems in low-income African and Asian countries have not, for the most part, been a fiscal drain of the magnitude that transition economies and Latin American economies experienced. However, given the rapid demographic transitions predicted, the current DB systems are likely to run into trouble when the endogenous risks come to fruition. Since in many of these countries tax revenues are only 10-20 percent of GDP, even a low expenditure such as the 1.7 % of GDP Sri Lanka spends on pensions for the civil service amounts to 10% of budget resources, with a high marginal cost. The income distribution aspects of this transfer have not been analyzed, as these depend on both the incidence of the tax system and the transfer. But it is likely that these civil service schemes are regressive. Conversion to DC schemes would reduce endogenous risks.

Pillar 2 systems are also problematic, as, poor reserve management in the provident fund systems means that benefits have been low. In at least one country (Ghana) the evaporation of reserves in the provident fund system forced the conversion of account balances into PAYGO rights during SOE downsizing. China is currently making the same conversion. While we have argued above that Pillar 2 systems carry less endogenous risk, that risk is not zero. Public management carries political risk.

Management of reserves in low-income countries with Pillar 2 systems is a key issue. Two changes are needed to raise returns. First, the share of government bonds and other investments in the portfolio should be lowered so that government faces the true costs of public borrowing and so that returns increase. Second, management of reserves needs to become more transparent. Is private management a better choice in countries with under-developed capital markets? The analysis of Iglesias and Palacios (2000) sheds some light on this question. In their analysis, at every level of national income, private management delivers higher returns than public management. However, they add an important caveat – in countries with poor governance overall (as measured by outside

---

33 If, as we have argued above, poor performing provident funds run the risk of bailouts, this is an even stronger argument for lowering the investment in government bonds, since not only are the current costs of the borrowing lowered but the intertemporal costs are totally distorted, leading to very poor resource allocation.
sources such as Transparency International), their model predicts that even private management can yield negative real returns. Note, however, that the governance standard for a prediction of positive returns to private management is fairly low. Egypt and Tanzania, for example, countries with provident funds, are currently above this standard. As a result, simply investing reserves in bank deposits would yield a better rate of return than has been realized in the past. In addition, the regression model used by Iglesias and Palacios ignores the potential interactive effect of private management on governance. In sum, for young low-income countries with underdeveloped capital markets a funded DC system with private management, investing in for example a mix of international assets, local bank deposits, and government securities instruments appears to be the best starting point for an old-age security system. As local capital markets mature, a more diverse local asset mix could be permitted.

With low coverage rates, Pillar 1 systems do not offer security in old age for most of the population today. The argument for preserving traditional Pillar 1 systems in low and lower middle income countries is that they will grow up to be serviceable old-age security systems, perhaps in a robust blend system. The evidence on changes in coverage, based on the upper middle income countries, is not hopeful for the medium term. Even after reforms, coverage of low-income populations in Latin America has not increased. Looking at the lives of poor households around the world, it is not hard to see why. Savings in pension system are illiquid, and usually earn a rate of return no greater than 5-8% real under the best management in developing country markets. Poor households in India regularly pay 50% annually for credit through moneylenders and informal credit networks for working capital. Why should such a credit-constrained household save for old age in a formal system? In general, household saving for old age is correlated with income. Around the world, through history, poor household’s income tends to be too erratic to allow the type of life-cycle savings behavior that second pillar systems encourage. Development of extensive welfare systems is correlated with industrialization and income.

This raises the question of whose preferences are being accommodated in the development of fully-fledged pension systems in low-income countries. Is there a large unmet demand for contributory pension systems once the true costs is known, or are these systems simply a additional fringe benefit for government sector workers? If the latter, then there is a strong case for low-income countries to concentrate solely on funded, DC, contributory occupational systems, and not try to create blends at this point. This would reduce the fiscal burden, make the costs transparent, and reduce the risk of public funds being used to bail out these systems at the costs of programs to help the poor (who have no chance of being covered by the systems as currently designed). As countries grow richer, safety net programs for the poor elderly can be introduced (for example, Hong Kong has such a system). These safety net programs could mature into blend systems. In countries with high level of inequality, such as South Africa and Brazil, demogrants financed by general taxes have a strong anti-poverty effect in rural areas (Morduch 1997). The challenge is to find a level that is affordable, while the method of financing does not cause large-scale evasion and as a result an unfair or undesirable payment burden.

34 The issue of coverage receives a full treatment in, Holzmann, Packard, and Cuesta (2000).
Conclusions

As *Averting the Old Age Crisis* was being prepared, Chile was the model for systemic change from PAYGO DB-systems to advance-funded systems with individual accounts. The 1990s have been a period of blossoming innovation in reform of mandatory pension provision, but the innovations have taken another course. Few countries have followed Chile more or less to the letter. What we have witnessed during the 1990s is an explosion of ideas for creating financially sustainable mandatory public systems in areas with environments as different as Latin America, the OECD and the transition economies. What have we learned from the experience of recent years?

First, two-pillar systems combining a PAYGO first pillar with a second pillar scheme with funded individual accounts have become popular. New systems of this type have emerged in areas of the world as diverse as Sweden in the OECD, Hungary, Latvia, and Poland among the transition countries, Hong Kong in Asia, and Argentina, Peru and Uruguay in Latin America. These reforms help reduce the risks of the PAYGO system by reducing its size in the long-run. They shift the management of funds into the market, offering opportunities for better pensions through higher returns, greater transparency, and individual choice. They diversify the social security portfolio, offering flexibility in an uncertain world.

Second, and related to the first point, the DB-system has proved more robust than expected, as some countries have opted to fix their DB-systems. This has usually meant increasing the number of years required for full benefits and the number of years counted in the actual computation of the benefit. The idea of introducing a life expectancy factor into the DB-formula has also been considered. The goal is to reduce long-term costs. The ability to reduce long term upside risks for future generations of the DB-systems by adding on a second pillar (and simultaneously reducing revenues for and obligations of the DB-PAYGO system) has probably contributed to its popularity.

The NDC system has emerged as an alternate to the DB-system when a country desires to maintain a larger first pillar. It is possible to convert rights acquired under fairly diverse DB-systems into NDC systems, with some advance funding to cover demographic fluctuations. Countries that take this step, as for example, Mongolia, may do so with the intention of introducing the second pillar at a later time. Countries gain a more direct link between contributions and benefits, with life expectancy accounted at the benefit payout phase. Key system features such as indexing obligations to changes in contribution revenues help to increase long-term financial stability.

Third, countries with funded individual financial accounts have focused on improving old and developing new models. Several alternatives for system design have emerged. The focus of innovation has been on reducing costs and on providing more individual choice, especially during the investment phase.

Fourth, there are still open issues. One is what type of system should be adopted in poor and younger middle income countries. It appears that we are still no farther along here than we were in the beginning of the nineties. An affordable model with broad coverage
has not emerged. The history of richer countries suggests that it may not emerge. Another is that in the more advanced countries, the issue of who bears the risks of increasing longevity and economic shocks in publicly mandated schemes, is still being debated, and the tradeoff between sharing risk and moral hazard is still being explored. The risk that has only recently received attention is the moral hazard risk of a combination of rules, employer practices and individual and employer attitudes that leads to early exit from the labor force. The generation about to retire (and those who have retired) likes this feature, and future generations do not fully perceive the costs to them. Both NDC PAYGO and funded individual financial account systems reduce the moral hazard risk, at the cost of less exogenous risk coverage. A blend of PAYGO and funded allow a mix of risk sharing instruments and offers more flexibility when shocks occur.

Finally, it is important to emphasize that it is not necessary to go from unfunded PAYGO DB to funded, individual account DC systems to create sustainability in the public provision of mandatory old age pensions. Combinations can enhance stability dramatically, as can NDC. What is more, traditional DB-systems can be developed to bring them closer to the DC idea. This is also what is happening.
## Table 1: National Pension System Architecture, 1994 and 1999

<table>
<thead>
<tr>
<th></th>
<th>1st Pillar Only</th>
<th>2nd Pillar Only</th>
<th>Blend</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DB</td>
<td>NDC</td>
<td>Provident Fund</td>
</tr>
<tr>
<td>1994</td>
<td>OECD (rest)</td>
<td>Latin America</td>
<td>India</td>
</tr>
<tr>
<td></td>
<td>Latin America</td>
<td></td>
<td>Nepal</td>
</tr>
<tr>
<td></td>
<td>Central and</td>
<td></td>
<td>Gambia</td>
</tr>
<tr>
<td></td>
<td>Eastern Europe</td>
<td></td>
<td>Kenya</td>
</tr>
<tr>
<td></td>
<td>and FSU</td>
<td></td>
<td>Tanzania</td>
</tr>
<tr>
<td></td>
<td>India (pub)</td>
<td></td>
<td>Uganda</td>
</tr>
<tr>
<td></td>
<td>MENA</td>
<td>Africa (most)</td>
<td>Zambia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>China</td>
<td>Asian islands</td>
</tr>
<tr>
<td></td>
<td>Korea</td>
<td></td>
<td>PNG</td>
</tr>
<tr>
<td></td>
<td>Philippines</td>
<td></td>
<td>Singapore</td>
</tr>
<tr>
<td></td>
<td>Vietnam</td>
<td></td>
<td>Malaysia</td>
</tr>
<tr>
<td></td>
<td>Cambodia</td>
<td></td>
<td>Indonesia</td>
</tr>
<tr>
<td></td>
<td>Laos</td>
<td></td>
<td>Brunei</td>
</tr>
<tr>
<td></td>
<td>Malaysia (pub)</td>
<td></td>
<td>Thailand</td>
</tr>
<tr>
<td></td>
<td>Indonesia (pub)</td>
<td></td>
<td>Sri Lanka</td>
</tr>
<tr>
<td></td>
<td>Sri Lanka (pub)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>OECD (rest)</td>
<td>Latin America</td>
<td>Italy</td>
</tr>
<tr>
<td></td>
<td>Latin America</td>
<td></td>
<td>Gambia</td>
</tr>
<tr>
<td></td>
<td>(rest)</td>
<td></td>
<td>Kenya</td>
</tr>
<tr>
<td></td>
<td>Africa (most)</td>
<td></td>
<td>Tanzania</td>
</tr>
<tr>
<td></td>
<td>MENA</td>
<td></td>
<td>Uganda</td>
</tr>
<tr>
<td></td>
<td>Korea</td>
<td></td>
<td>Zambia</td>
</tr>
<tr>
<td></td>
<td>Philippines</td>
<td></td>
<td>Asian islands</td>
</tr>
<tr>
<td></td>
<td>Vietnam</td>
<td></td>
<td>PNG</td>
</tr>
<tr>
<td></td>
<td>Cambodia</td>
<td></td>
<td>Singapore</td>
</tr>
<tr>
<td></td>
<td>Laos</td>
<td></td>
<td>Brunei</td>
</tr>
<tr>
<td></td>
<td>Central and</td>
<td>China</td>
<td>Kyrgyz Rep.</td>
</tr>
<tr>
<td></td>
<td>Eastern Europe</td>
<td>Mongolia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and FSU</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and FSU (rest)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indonesia (pub)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Malaysia (pub)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sri Lanka (pub)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Region</td>
<td>2000</td>
<td>2010</td>
<td>2020</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>OECD</td>
<td>19.9</td>
<td>23.1</td>
<td>27.0</td>
</tr>
<tr>
<td>Transition Countries</td>
<td>17.0</td>
<td>18.2</td>
<td>21.5</td>
</tr>
<tr>
<td>Latin America</td>
<td>7.7</td>
<td>9.3</td>
<td>12.2</td>
</tr>
<tr>
<td>Asia</td>
<td>7.3</td>
<td>8.6</td>
<td>11.6</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>7.3</td>
<td>8.1</td>
<td>10.0</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>4.4</td>
<td>4.5</td>
<td>4.9</td>
</tr>
</tbody>
</table>

References


